

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 24. (Canceled)

25. (New) A reciprocating fluid pump assembly, comprising:

a housing assembly including a drive section and an adjacent pump section;

a drive assembly disposed in the drive section, the drive assembly including a permanent magnet and a coil assembly having a winding, one of the magnet and the coil assembly being capable of reciprocal movement along an axis between a first position and a second position with respect to the other, the one forming, at least in part, a movable member, application of a signal to the winding causing movement of the movable member between the first position and the second position;

a resilient member biasing the movable member in the first position; and

a pump assembly disposed in the pump section, the pump assembly including a pump member capable of reciprocal movement, the pump member operatively connected to the movable member, movement of the movable member causing movement of the pump member.

26. (New) The reciprocating fluid pump assembly of claim 25, wherein the coil assembly surrounds the permanent magnet.

27. (New) The reciprocating fluid pump assembly of claim 25, wherein the movable member includes the coil assembly.

28. (New) The reciprocating fluid pump assembly of claim 27, further comprising a plunger operatively connected to the coil assembly.

29. (New) The reciprocating fluid pump assembly of claim 28, wherein the resilient member is disposed between the plunger and the pump assembly.

30. (New) The reciprocating fluid pump assembly of claim 25, wherein the resilient member is a spring.

31. (New) The reciprocating fluid pump assembly of claim 25, wherein the permanent magnet comprises two permanent magnets.

32. (New) The reciprocating fluid pump assembly of claim 31, further comprising a core capable of conducting magnetic flux disposed between the two magnets.

33. (New) The reciprocating fluid pump assembly of claim 25, wherein the pump assembly further includes a fluid inlet passage having an inlet check valve, movement of the pump member actuating the inlet check valve.

34. (New) The reciprocating fluid pump assembly of claim 33, further comprising a bypass passage extending from the fluid inlet passage to an interior of the drive section such that the drive assembly is at least partially bathed in fluid.
35. (New) The reciprocating fluid pump assembly of claim 25, further comprising a nozzle in fluid communication with the pump assembly for expressing pressurized fluid from the pump assembly.
36. (New) The reciprocating fluid pump assembly of claim 35, wherein the nozzle includes a poppet.
37. (New) The reciprocating fluid pump assembly of claim 25, wherein the reciprocating fluid pump assembly is adapted to pump one of fuel and oil.
38. (New) A fuel injection system, comprising:
a fuel reservoir; and
at least one reciprocating fuel pump assembly in fluid communication with the fuel reservoir, each of the at least one reciprocating fuel pump assemblies comprising:
a housing assembly including a drive section and an adjacent pump section;
a drive assembly disposed in the drive section, the drive assembly including a permanent magnet and a coil assembly having a winding, one of the magnet and the coil assembly being capable of reciprocal movement along an axis between a first position and a second position with respect to the other, the one forming, at least in part, a movable member, application of a signal to the winding causing movement of the movable member between the first position and the second position;
a resilient member biasing the movable member in the first position; and
a pump assembly disposed in the pump section, the pump assembly including a pump member capable of reciprocal movement, the pump member operatively connected to the movable member, movement of the movable member causing movement of the pump member.
39. (New) The fuel injection system of claim 38, further comprising:
a first fuel pump for drawing fuel from the fuel reservoir;
a separator for receiving fuel from the first fuel pump; and
a second fuel pump for drawing fuel from the separator,
the at least one reciprocating fuel pump assembly receiving fuel from the second fuel pump.
40. (New) The fuel injection system of claim 39, further comprising:
an inlet manifold receiving fuel from the second fuel pump, the at least one reciprocating fuel pump assembly drawing fuel from the inlet manifold; and
a return manifold for returning excess fuel from the at least one reciprocating fuel pump assembly to the separator.

41. (New) The fuel injection system of claim 38, wherein the at least one reciprocating fuel pump assembly comprises a plurality of reciprocating fuel pump assemblies.
42. (New) The fuel injection system of claim 38, further comprising an injection controller to control the operation of the at least one reciprocating fuel pump assembly.
43. (New) The fuel injection system of claim 38, wherein the coil assembly surrounds the permanent magnet.
44. (New) The fuel injection system of claim 38, wherein the movable member includes the coil assembly.
45. (New) The fuel injection system of claim 38, wherein the permanent magnet comprises two permanent magnets.
46. (New) The fuel injection system of claim 38, wherein the at least one reciprocating fuel pump assembly further comprises a nozzle in fluid communication with the pump assembly for expressing pressurized fluid from the pump assembly.
47. (New) An internal combustion engine, comprising:
at least one combustion chamber; and
a fuel injection system having a reciprocating fuel pump assembly associated with the combustion chamber to inject fuel therein,
the reciprocating fuel pump assembly comprising:
a housing assembly including a drive section and an adjacent pump section;
a drive assembly disposed in the drive section, the drive assembly including a permanent magnet and a coil assembly having a winding, one of the magnet and the coil assembly being capable of reciprocal movement along an axis between a first position and a second position with respect to the other, the one forming, at least in part, a movable member, application of a signal to the winding causing movement of the movable member between the first position and the second position;
a resilient member biasing the movable member in the first position; and
a pump assembly disposed in the pump section, the pump assembly including a pump member capable of reciprocal movement, the pump member operatively connected to the movable member, movement of the movable member causing movement of the pump member.
48. (New) The internal combustion engine of claim 47, wherein the at least one combustion chamber comprises a plurality of combustion chambers, and
wherein the fuel injection system has a plurality of reciprocating fuel pump assemblies, each of the fuel pump assemblies being associated with a combustion chamber.